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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,156	02/12/2007	Gerd Hoffmann	AFILM-204	6189
24972	7590	10/30/2009	EXAMINER	
FULBRIGHT & JAWORSKI, LLP			CHANG, AUDREY Y	
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NEW YORK, NY 10103-3198			PAPER NUMBER	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/591,156

**Applicant(s)**

HOFFMANN ET AL.

**Examiner**

Audrey Y. Chang

**Art Unit**

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12-22 and 24 is/are pending in the application.
- 4a) Of the above claim(s) 19-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-18 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 1, 2009 has been entered.
2. The applicant has NOT amended the claims.
3. Claims 19-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected group, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on September 4, 2008.
4. Claims 12-18 and 24 remain pending in this application.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 12-14, 17 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by the patent issued to Argoitia et al (PN. 6,777,085).**

Argoitia et al teaches an article having Fabry Perot filter coated on a substrate, wherein the article has a substrate (12, Figure 1A), a *first reflecting layer* (14), a spacer or intermediate layer (16) and a *second reflecting layer* (18, please see column 1, line 22, column 3, lines 45-52, and column 5, lines 33-

50). Argoitia et al teaches that the first reflecting layer (14) and the second reflecting layer (18) have mutually reflecting facing surfaces that are apart by a gap with a thickness of  $d$ , wherein the intermediate or spacer layer is interposed in the gap as shown in Figure 1A. Argoitia et al further teaches that the first reflecting layer is comprised of a metal such as aluminum, serving as the base material, the spacer layer is comprised of aluminum oxide, which is a chemical compound of aluminum (base material) with oxygen (serves as the further material) and the second reflecting layer may also comprise of a semi-transparent aluminum layer, (please see column 5, lines 44-50). This means the first and second reflecting layers are comprised of **same** base material.

With regard to claims 13-14, Argoitia et al teaches that the first reflecting layer is comprised of a metal such as aluminum, serving as the base material, the spacer layer is comprised of aluminum oxide, which is a chemical compound of aluminum (base material) with oxygen (serves as the further material) and the second reflecting layer may also comprise of a semi-transparent aluminum layer, (please see column 5, lines 44-50).

With regard to claim 17, Argoitia et al teaches explicitly that the first reflecting layer is opaque and the second reflecting layer is semi-transparent, (please see column 5, lines 50-53 and 48).

With regard to claim 24, the product-by-process limitations are not given patentable weight for it does not differentiate the final product from the prior art, (please see MPEP 2173,05(p)). Furthermore, Argoitia et al does teach that the layers are deposited on the substrate by conventional deposition methods such as chemical vapor deposition (CVD), physical vapor deposition (PVD) and plasma-enhanced CVD, (please see column 8). These deposition methods essentially require a vacuum coating facility with a vacuum chamber (113, Figures 2A, 2B and 2C). The vacuum chamber achieves vacuum condition by the vacuum pump system (120). The facility further comprises vaporization device that is charging with the base material via the plasma generator (114) to introduce the base material for deposition. It is implicitly true that the vacuum chamber has to be closed to generate the vacuum. The vaporization of the base

material is implicitly included to vaporization deposition of the base material on the substrate. For the deposition of the aluminum oxide or the metal oxide it requires the simultaneous introduction of the further material such as oxygen into the chamber (via the gas distributor 135 and 134) to oxidize the aluminum to form the aluminum oxide, (please see columns 7-8). The deposition of the first reflecting layer, spacer layer and the second reflecting layer sequentially.

**This reference has therefore anticipated the claims.**

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Argoitia et al (PN. 6,777,085).**

The article having Fabry Perot filter coated on a substrate taught by Argoitia et al as described for claim 12 above has met all the limitations of the claim.

Argoitia et al teaches that the opaque aluminum or reflecting layer has a thickness of 50-80 nm, (please see column 5, line 11) and the spacer or intermediate layer has an optical thickness of about 2 to 8 quarter wavelengths, (please see column 5, lines 29-32) which has physical thickness of about 130-149nm. This reference however does not teach explicitly that the second reflecting layer of the semi-transparent aluminum is about 1 to 20 nm. However one skilled in the art must know that in order for the aluminum to be semi-transparent, it must have a thickness less than 40 nm and preferably between 5 to

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40nm. It would then have been obvious to one skilled in the art to modify the second reflecting layer of semi-transparent aluminum layer to have a thickness be less than 20 nm to have good semi-transparent and semi-reflection properties.

**9. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Argoitia et al in view of the patent issued to Nelson (PN. 6,165,598).**

The article having Fabry Perot filter coated on a substrate taught by Argoitia et al as described for claim 12 above has met all the limitations of the claim.

Argoitia et al teaches that the reflecting layers of the Fabry Perot filter are made of aluminum and the spacer or intermediate layer is made of aluminum oxide, but it does not teach that the intermediate layer is alternatively made of aluminum nitride. However Fabry Perot filter is based on interference properties of the multiple layers and both aluminum oxide and aluminum nitride are common or well-known dielectric materials for forming the layers for the interference filter as taught by Nelson, (please see column 5, lines 1-5). It would then have been obvious to one skilled in the art to apply the teachings of Nelson to modify the Fabry Perot filter of Argoitia et al to use aluminum nitride as alternative material for the spacer or intermediate layer for the benefit of allowing different design for the Fabry Perot filter.

### ***Response to Arguments***

10. Applicant's arguments filed September 1, 2009 have been fully considered but they are not persuasive. The newly amended and newly submitted claims have been fully considered and they are rejected for the reasons stated above.

11. In response to applicant's arguments which state that the layer (18) disclosed by cited Argoitia reference is an *absorbing* layer and not a reflective layer that therefore differs from the instant application, the examiner respectfully disagrees. The applicant is respectfully reminded that even though

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the layer (18) is being identified as *absorbing* layer, it does not mean that it would not reflect light. In fact Argoitia reference teaches explicitly that the absorbing layer (18) partially transmits, partially absorbs and partially reflects light, (please see column 5, lines 35-40). So it also has light reflection property and therefore also serves as a reflecting layer. Applicant being one skilled in the art must know optical layer in general would have partial transmittance, reflectance and absorptance of incident light based on the material structure of the layer and the wavelength of the incident light. An absorbing layer does not prevent it from reflecting light. In fact, Argoitia et al teaches that the “absorbing layer” is made of either dielectric material or non-opaque metal that **implicitly** have reflective property. Argoitia et al **explicitly** teaches that the absorbing layer is design to absorb some light, transmit some light and REFLECT some light, (please see column 5, lines 33-39). Also one skilled in the art must understand as long as the material is not vacuum, light will be “blocked” the material and will be absorbed the material. So every material is capable of absorbing light this does not make the material therefore cannot also reflect light or transmit light. Furthermore, Argoitia et al reference teaches explicitly that the relative layer “14” and the absorbing layer “18” can be made of the same dielectric materials “TiN” or “ZiN”, or same aluminum material, (please see column 5, lines 3-5 and lines 33-35), this means the absorbing layer “18” can serve as the reflective layer the same way as the reflective layer “14”. The absorbing layer (18) therefore serves as the and reads as the second *reflecting* layer.

### ***Conclusion***

12. This is a request for continuation examination of applicant's earlier Application No. 10/591,156. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case.

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See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (9:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephon B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Audrey Y. Chang, Ph.D.*

*/Audrey Y. Chang/  
Primary Examiner, Art Unit 2872*